

AbstractTWO-SPEED WHEEL ASSEMBLY FOR MANUAL WHEELCHAIRS,
WITH A QUICK-RELEASE MOUNTING CAPABILITY

A wheel assembly for a wheelchair having a number of structural features, including a two-gear arrangement, in which one gear is a hypocycloidal gear providing a gear ratio lower than 1:1. A shift member is located on the wheel assembly with hand operated shift portions of the shift member, the shift member capable of moving laterally (perpendicular to the axle) of the wheel between two positions. The shift member can be moved by the user while seated in the wheelchair. The wheel assembly includes a hand rim which is connected to a housing within which is a gear assembly. The gear assembly includes two spaced cage plates which are joined by fixed shafts having unidirectional rollers positioned thereon around the periphery thereof. The rollers have an exterior surface portion which engages with the interior surface of the housing in such a way as to readily permit movement in the forward direction, but to prevent movement in the rear direction, unless the hand rims are used to rotate the housing relative to the gear assembly. The cage plate structure has rubbing elements which interact with the interior surface of the housing to produce an additional braking force for downhill terrain.